SEQUENCE LISTING

<110> Sale, Julian E.
Neuberger, Michael S.
Cumbers, Sarah J.

<120> Method of Generating Diversity

<130> 18396/2002B

<140> 10/733,532
<141> 2003-12-11

<150> PCT/GB02/02688
<151> 2002-06-11

<150> 10/146,505
<151> 2002-05-15

<150> 09/879,813
<151> 2001-06-11

<160> 130

<170> PatentIn version 3.2

<210> 1
<211> 24
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 1
gcggtacctg aggagacggt gacc 24

<210> 2
<211> 30
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 2
ccccaagctt cccaggtgca gctacagcag 30

<210> 3
<211> 30
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 3
ccccggtacc agatgagctt ggacttgcgg 30

<210> 4

<211> 35
<212> DNA
<213> Artificial

<220>
<223> Primer

<400> 4
ccccaagctt cgggagtgca tccgccccaa ccctt 35

<210> 5
<211> 30
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 5
ccccaagctt cccagtctgc cctgactcag 30

<210> 6
<211> 30
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 6
cccctctaga ccacctagga cggtcagctt 30

<210> 7
<211> 29
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 7
ggactgcagt caggttcagt ggcagtggg 29

<210> 8
<211> 31
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 8
caggagctcg cggggccgtc actgattgcc g 31

<210> 9
<211> 34
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 9
gcgcaagctt ccccagcctg ccgccaagtc caag 34

<210> 10
<211> 26
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 10
ggaattctca gtgggagcag gagcag 26

<210> 11
<211> 27
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 11
cgggagctcc gtcagcgctc tctgtcc 27

<210> 12
<211> 29
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 12
ggggtacccg gaggagacga tgacttcgg 29

<210> 13
<211> 23
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 13
gcagttcaag aattcctcgc tgg 23

<210> 14
<211> 24
<212> DNA
<213> Artificial

<220>
<223> primer

<400> 14
ggagccatcg atcacccaat ccac 24

<210> 15
<211> 341
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)..(341)

<400> 15
tggggcgcag gactgttgaa gccttcggag accctgtccc tcacctgcgg tgtttatggt 60

gggtccttca gtggttacta ctggagctgg atccgccagc ccccagggaa ggggctggag 120

tggattgggg aaatcaatca tagtggaagc accaactaca acccgtccct caagagtcga 180

gtcaccatat cagtagacac gtccaagaag cagctctccc tgaagttgag ctctgtgaac 240

gccgcggaca cggctgtgta ttactgtgcg agagttatta ctagggcgag tcctggaaca 300

gacgggaggt acggtatgga cgtctggggc caagggacca c 341

<210> 16
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> A62

Sequence 'tcag tgg' is deleted

<400> 16
ggtcctttac ta 12

<210> 17
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> A 120

Nucleotide 'T' at position 7 is deleted

<400> 17
gtggatgggg aa 12

<210> 18
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> A276

Nucleotides TGTGNNNNNNNNNNNNNNNNTACT are deleted

N = nucleotides A, T, G or C

<400> 18
tattacaggg cg 12

<210> 19
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> A306

Nucleotide 'C' at position 7 is deleted

<400> 19
gaggtaggta tg 12

<210> 20
<211> 11
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> B93

Nucleotide G at position 7 is deleted

<400> 20
ccgccacccc a 11

<210> 21
<211> 11
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> B98

Nucleotide 'C' at position 7 is deleted

<400> 21
agcccaggga a 11

<210> 22
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> B227

The sequence 'CTGTG' is deleted

<400> 22
tgagctaacg cc 12

<210> 23
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> C82

The sequence TGGA.37bp.GAGT is deleted

<400> 23
tggagtggat tg 12

<210> 24
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> C209

The sequence 'tctt ccctgaagtt' is deleted

<400> 24
agcaccgagc tc 12

<210> 25
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> C187

The sequence 'GTACACACGTCCAAGA' is deleted

<400> 25
atatcaagca cc 12

<210> 26
<211> 11
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> U26

Nucleotides 'CC' are deleted

<400> 26
cggagactgc c 11

<210> 27
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> U199

Nucleotides 'AAG' are deleted

<400> 27
acgtccaagc ac 12

<210> 28
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> U208

Nucleotide 'C' at position 7 is deleted.

<400> 28
aagcagtttc tc 12

<210> 29
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> U268

The sequence 'GTTATTA' is deleted

<400> 29
gcgagactag gg 12

<210> 30
<211> 34
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (17)..(29)
<223> A255

The sequence 'CGAGAGTTATTA' is inserted between positions 17 and 29 and is a duplication of nucleotides between positions 5 and 16.

<400> 30
tgtgcgagag ttattacgag agttattact aggg 34

<210> 31
<211> 166
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (18)..(80)
<223> N= nucleotide a,g,c or t

<220>
<221> misc_feature
<222> (84)..(161)
<223> A113 Nucleotides 'agtggat tgggnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnntatc' are inserted between positions 84 and 161 and duplicate nucleotides between positions 7 and 83.

<220>
<221> misc_feature
<222> (95)..(157)
<223> N= nucleotide a,g,c or t

<400> 31
ggctggagtg gattgggnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60

nnnnnnnnnn nnnnnnnnnt atcagtggat tgggnnnnnn nnnnnnnnnn nnnnnnnnnn 120

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnntatc agtaga 166

<210> 32
<211> 30
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (16)..(25)
<223> U43

The sequence 'GGTGTTTAT' is inserted and duplicates sequences between positions 7 and 16.

<400> 32
acctgcggtg tttatggtgt ttatggtggg 30

<210> 33
<211> 34
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (16)..(29)
<223> U318

The sequence 'ACGTCTGGGGCCA' is inserted and duplicates sequences between positions 3 and 15

<400> 33
ggacgtctgg ggccaacgtc tggggccaag ggac 34

<210> 34
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> D27

The sequence 'CCTCA' is deleted

<400> 34
ggagaccctg cg 12

<210> 35
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> D31

Nucleotide 'A" is deleted at positions 7

<400> 35
accctccctg cg 12

<210> 36
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> D219

Nucleotide 'G' is deleted at position 7.

<400> 36
cctgaattga gc 12

<210> 37
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> D150

Nucleotide 'C' is deleted at position 7

<400> 37
caccaataca ac 12

<210> 38
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> D109

Nucleotide 'C' at position 7 is deleted

<400> 38
aaggggtgga gt 12

<210> 39
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> E28

The sequence 'CCTGC' is deleted.

<400> 39
ccctcaggtg tt 12

<210> 40
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> E81

The sequence "ttgg annnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnntg gag' is deleted

<400> 40
ctggagtgga tt 12

<210> 41
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> E88

The sequence 'cgcc' is deleted

<400> 41
tggatcagcc cc 12

<210> 42
<211> 11
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (6)..(6)
<223> E92

Nucleotide 'g' at position 6 is deleted

<400> 42
cgccaccccc a 11

<210> 43
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> E136

The sequence 'AGTGGAAGCACCAACTA' is deleted

<400> 43
aatcatcaac cc 12

<210> 44
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> F66

The sequence 'TGGTTACTACT' is deleted

<400> 44
cttcacggag tt 12

<210> 45
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(13)
<223> F183

Nucleotides 'ATCAGTA' are deleted between postions 7 and 13

<220>
<221> misc_feature
<222> (7)..(13)
<223> F183

The sequence 'ATCAGTA' is deleted

<400> 45
tatcatacac gt 12

<210> 46
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> F215

The sequence TGAA.18bp.CGCC is deleted

<400> 46
tctcccgcgg ac 12

<210> 47
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> F267

Nucleotides 'AG' between are deleted.

<400> 47
tgcgagttat ta 12

<210> 48
<211> 102
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (9)..(50)
<223> N = nucleotides A, T, G or C

<220>
<221> misc_feature
<222> (54)..(99)
<223> D55

The sequence 'gtggnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna ggg' is inserted between positions 54 and 99 and duplicates sequences between positions 5 and 53

<220>
<221> misc_feature
<222> (58)..(95)
<223> N = nucleotides A, T, G or C

<400> 48
tatggtggnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnna ggggtggnnn 60

nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnagggaa gg 102

<210> 49
<211> 55
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (29)..(50)
<223> D123

The sequence 'GGAAATCAATCATAGGGAAGC' is inserted between positions 29 and 50 and duplicates sequences between 7 and 28

<400> 49
gattggggaa atcaatcata gtggaagcgg aaatcaatca tagggaagca ccaac 55

<210> 50
<211> 44
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (9)..(19)
<223> N = nucleotides A, T, G or C

<220>
<221> misc_feature
<222> (23)..(41)
<223> F85

The sequence' ggatnnnnnnnnnnccca' is inserted between positions 23 and 41 and duplicates the sequence between positions 4 and 22

<220>
<221> misc_feature
<222> (27)..(37)
<223> N = nucleotides A, T, G or C

<400> 50
agttggatnn nnnnnnncc caggatnnnn nnnnnnccca ggga 44

<210> 51
<211> 17
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(12)
<223> D3

The sequence GACCC between positions 7 and 12 replace the sequence AGGACTGT

<400> 51
ggtcgcgacc ctgaagc 17

<210> 52
<211> 130
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (9)..(59)
<223> N = nucleotides A, T, G or C

<220>
<221> misc_feature
<222> (64)..(124)
<223> D56

The sequence 'ggtgggnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnncaggg' is inserted between positions 64 and 124 and is a duplicate of the sequence between positions 2 and 63

<220>
<221> misc_feature
<222> (70)..(120)
<223> N = nucleotides A, T, G or C

<400> 52
atggtgggnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnca 60

gggggtgggn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnc 120

agggaagggg 130

<210> 53
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(10)
<223> D71

The nucleotides 'GGG' between positions 7 and 10 replace the nucleotide 'A'

<400> 53
gtggttgggc tactg 15

<210> 54
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature

<222> (7)..(9)
<223> D75

The nucleotides 'GG' between positions 7 and 9 replace the nucleotide 'C'

<400> 54
ttactaggtg gagtt 15

<210> 55
<211> 14
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (6)..(9)
<223> D126

The sequence 'GGG' between positions 6 and 9 replaces the sequence 'AATCAATCAT'

<400> 55
tgggagggag tgga 14

<210> 56
<211> 21
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(15)
<223> D223

The sequence 'GACCCGGC' between positions 7 and 15 replaces the sequences 'AG'

<400> 56
aagttggacc cggcctctgt g 21

<210> 57
<211> 42
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (15)..(37)
<223> D232

The sequence 'GCCCCCGTCCTGTGAACGCCGC' is inserted between positions 15 and 37

<400> 57
tctgtgaacg ccgcgccccc gtcctgtgaa cgccgcggac ac 42

<210> 58
<211> 17
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(12)
<223> D235

The sequence 'GGAGG' is inserted between positions 7 and 12

<400> 58
gtaaacggag ggccgcg 17

<210> 59
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> D252

The sequence 'TCC' between positions 7 and 9 replace the sequence 'GTATTACTGT'

<400> 59
ggctgttccg cgaga 15

<210> 60
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> D268

The nucleotides 'AGG' between positions 7 and 9 replace the nucleotides 'GT'

<400> 60
gcgagaaggt attatt 16

<210> 61
<211> 14
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(8)

<223> D332

The nculeotides 'GG' between psoitions 7 and 8 replace nucleotide ' C'

<400> 61
ttattaggta gggc 14

<210> 62
<211> 11
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> D332

The nucleotides AG' between positions 7 and 9 replace nucleotide 'C'

<400> 62
aagggaagca c 11

<210> 63
<211> 14
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (6)..(8)
<223> E51

The nucleotides 'GT' replaces the sequence 'AGGA.51bp.CTTC'

<400> 63
gggcgcgtag tggt 14

<210> 64
<211> 18
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(12)
<223> E51

The sequence AGACC replaces the sequence TGGT.15bp.TACT

<400> 64
tgtttaagac cactggag 18

<210> 65
<211> 15

<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> E80

The sequence CCC replaces the nucleotide G

<400> 65
actggaccct tggat 15

<210> 66
<211> 16
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(11)
<223> E263

The sequence GGTG replaces the sequence CGAGAGTTATTACT

<400> 66
actgtgggtg agggcg 16

<210> 67
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> F89

The sequence AGG replaces the sequence GCCAGCCCCAGGG

<400> 67
ggatccagga agggg 15

<210> 68
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> F168

The sequence GGG replaces the sequence AGAGTCGAGT

<400> 68

cctcaagggc accat 15

<210> 69
<211> 17
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(12)
<223> F195

The sequence AGGGC replaces the sequence GTCCAAGAAG

<400> 69
agacacaggg ccacctc 17

<210> 70
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> F199

The sequence CT replaces the sequence AAGAAG

<400> 70
acgtccctac cctga 15

<210> 71
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(9)
<223> F242

The sequence GGA replaces the sequence ACACGGCTGTGTATTACTGT

<400> 71
ccgcggggag cgaga 15

<210> 72
<211> 17
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(12)

<223> F260

the sequence CGTGA replaces the sequence GTG

<400> 72
attactcgtg acgagag 17

<210> 73
<211> 15
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(10)
<223> F264

The sequence ACA replaces the sequence GAGAG.46bp.CGTC

<400> 73
ctgtgcacat ggggc 15

<210> 74
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> B123

The nucleotide A replaces the nucleotide G

<400> 74
gattggaaaa tc 12

<210> 75
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> C109

The nucleotide T replaces nucleotide C

<400> 75
aagggttgga gt 12

<210> 76
<211> 36
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (17)..(31)
<223> Insertion of the sequence GAAGCCTTCGGAGA that duplicates the sequence between position 3 and 16

<400> 76
ttgaagcctt cggactgaag ccttcggaga ccctgt 36

<210> 77
<211> 30
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (15)..(25)
<223> U180

Insertion of sequence ACCATATCAG that duplicates the sequence between positions 5 and 14

<400> 77
agtcaccata tcaaaccata tcagtagaca 30

<210> 78
<211> 13
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> D45

The sequence GTTTATGGTGGGT is deleted

<400> 78
ctgcgcgcct tca 13

<210> 79
<211> 13
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (8)..(8)
<223> D164

The sequence CAAG is deleted

<400> 79
cgtccccagt cga 13

<210> 80
<211> 13
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (8)..(8)
<223> D216

The sequence AAG.22bp.CGGA is deleted

<400> 80
ctcccttcac ggc 13

<210> 81
<211> 12
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (7)..(7)
<223> E11

The nucleotide 'T' is deleted

<400> 81
gactgtaaag cc 12

<210> 82
<211> 13
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (8)..(8)
<223> E54

The sequence GGG.25bp.GTTG is deleted

<400> 82
ttatggagat ccg 13

<210> 83
<211> 13
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (8)..(8)
<223> F188

The sequence AGACACGTCCAGAA is deleted

<400> 83
tatcagggca cct 13

<210> 84
<211> 13
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (8)..(8)
<223> F220

The sequence TGAGCTCTGTG is deleted

<400> 84
ctgaagcaac gcc 13

<210> 85
<211> 300
<212> DNA
<213> Homo sapiens

<400> 85
cctgcctccg tgtctgggtc tcctggacag tcgatcacca tctcctgcac tggaaccagc 60

agtgacgttg gtggttataa ctatgtctcc tggtaccaac aaaacccagg caaagccccc 120

aaactcatga tttatgatgt cagtaatcgg ccctcaggga tttctaatcg cttctctggc 180

tccaagtctg gcaacacggc ctccctgacc atctctgggc tccaggctga cgacgaggct 240

gattattact gcacctcata tacaaacgac agcaattctc aggtattcgg cggagggacc 300

<210> 86
<211> 427
<212> DNA
<213> Homo sapiens

<400> 86
ggggccgtca ctgattgccg ttttctcccc tctctcctct ccctctccag gttccctggt 60

gcaggcagcg ctgactcagc cggcctcggt gtcagcaaac ccaggagaaa ccgtcaagat 120

cacctgctcc gggggtggca gctatgctgg aagttactat tatggctggt accagcagaa 180

ggcacctggc agtgcccctg tcactgtgat ctatgacaac accaacagac cctcgaacat 240

cccttcacga ttctccggtt ccctatccgg ctccacaaac acattaacca tcactggggt 300

ccgagccgat gacgaggctg tctatttctg tgggaatgca gacaacactg gtgctgcatt 360

tggggccggg acaaccctga ccgtcctagg tgagtcgctg acctcgtctc ggtctttctt 420

cccccat 427

<210> 87
<211> 372
<212> DNA
<213> Homo sapiens

<400> 87
gtgcagctgg tggagtctgg gggaggcgtg gtccagcctg gggggtccct gagactctca 60

tgtgcagcct ctggattcac cgtcagtagc aactacatga cctgggtccg ccaggctcca 120

gggaaggggc tggagtgggt gtcacttatt tatagcggtg gtagcacaac atattacgca 180

gagtccgtga agggccgatt caccatctcc agagacaatt ccaaaaacac gatgtatctt 240

caaatgaaca gcctgagagt agaggacacg gctgtgtatt actgtgcggg agacctgaac 300

agcacctcgg tagggactaa taatttctac atggacgtct ggggcaaagg gaccacggtc 360

accgtctcct ca 372

<210> 88
<211> 9
<212> PRT
<213> Homo sapiens

<400> 88

Phe Ile Phe Ser Thr Asn Ala Met Gly
1 5

<210> 89
<211> 37
<212> PRT
<213> Homo sapiens

<400> 89

Glu Trp Val Ala Gly Ile Asp Asp Asn Gly Ser Asp Thr Arg Tyr Ala
1 5 10 15

Pro Ala Val Lys Gly Arg Ala Thr Ile Ser Arg Asp Asn Gly Gln Ser
20 25 30

Thr Val Arg Leu Gln
35

<210> 90
<211> 11
<212> PRT
<213> Homo sapiens

<400> 90

Thr Lys Cys Ala Tyr Ile Ser Gly Tyr Asp Tyr
1 5 10

<210> 91

<211> 9
<212> PRT
<213> Homo sapiens

<400> 91

Phe Ile Phe Ser Ser Asn Ala Met Gly
1 5

<210> 92
<211> 37
<212> PRT
<213> Homo sapiens

<400> 92

Glu Trp Val Ala Asp Ile Asp Asp Asn Gly Ser Gly Arg Arg Tyr Ala
1 5 10 15

Pro Ala Val Lys Gly Arg Ala Thr Ile Ser Arg Asp Asn Gly Gln Ser
20 25 30

Thr Met Arg Leu Gln
35

<210> 93
<211> 11
<212> PRT
<213> Homo sapiens

<400> 93

Thr Lys Cys Thr Tyr Ser Ser Asp Tyr Asp Tyr
1 5 10

<210> 94
<211> 43
<212> PRT
<213> Homo sapiens

<400> 94

Ala Ser Val Ser Val Asn Pro Gly Glu Thr Val Lys Ile Thr Cys Ser
1 5 10 15

Gly Gly Gly Ser Tyr Gly Gly Ser Tyr Tyr Tyr Gly Trp Tyr Gln Gln
20 25 30

Lys Ala Pro Gly Ser Ala Pro Val Ser Val Ile
35 40

<210> 95
<211> 7
<212> PRT
<213> Homo sapiens

<400> 95

Arg Phe Ser Gly Ser Leu Ser
1 5

<210> 96
<211> 14
<212> PRT
<213> Homo sapiens

<400> 96

Ala Val Tyr Phe Cys Gly Asn Ala Asp Asn Ser Gly Ala Ala
1 5 10

<210> 97
<211> 43
<212> PRT
<213> Homo sapiens

<400> 97

Ala Ser Val Ser Ala Lys Pro Gly Glu Thr Val Lys Ile Thr Cys Ser
1 5 10 15

Gly Gly Gly Arg Tyr Ile Gly Arg Tyr Tyr Tyr Gly Trp Tyr Gln Gln
20 25 30

Lys Thr Pro Gly Ser Ala Pro Val Ser Met Ile
35 40

<210> 98
<211> 7
<212> PRT
<213> Homo sapiens

<400> 98

Arg Phe Ser Thr Ser Leu Ser
1 5

<210> 99
<211> 14
<212> PRT
<213> Homo sapiens

<400> 99

Ala Val Tyr Val Cys Gly Asn Val Asp Asn Asn Gly Ala Ala
1 5 10

<210> 100
<211> 8
<212> PRT
<213> Homo sapiens

<400> 100

Pro Gly Gly Ala Leu Ser Leu Val
1 5

<210> 101
<211> 14
<212> PRT
<213> Homo sapiens

<400> 101

Ser Thr Asn Ala Met Gly Trp Val Arg Gln Ala Pro Asp Lys
1 5 10

<210> 102
<211> 30
<212> PRT
<213> Homo sapiens

<400> 102

Asp Asn Gly Ser Asp Thr Arg Tyr Ala Pro Ala Val Lys Gly Arg Ala
1 5 10 15

Thr Ile Ser Arg Asp Asn Gly Gln Ser Thr Val Arg Leu Gln
20 25 30

<210> 103
<211> 8
<212> PRT
<213> Homo sapiens

<400> 103

Ala Tyr Ile Ser Gly Tyr Asp Tyr
1 5

<210> 104
<211> 8
<212> PRT
<213> Homo sapiens

<400> 104

Pro Gly Gly Pro Leu Arg Leu Val
1 5

<210> 105
<211> 14
<212> PRT
<213> Homo sapiens

<400> 105

Ser Thr Asn Ala Met Gly Trp Val Arg Gln Ala Pro Asp Lys

1 5 10

<210> 106
<211> 30
<212> PRT
<213> Homo sapiens

<400> 106

Asp Asp Gly Ser Asp Thr Arg Tyr Ala Pro Ala Val Lys Gly Arg Ala
1 5 10 15

Thr Ile Ser Arg Asp Asn Gly Gln Arg Thr Val Arg Leu Gln
20 25 30

<210> 107
<211> 8
<212> PRT
<213> Homo sapiens

<400> 107

Ala Tyr Ile Ser Gly Cys Asp Tyr
1 5

<210> 108
<211> 8
<212> PRT
<213> Homo sapiens

<400> 108

Pro Gly Gly Pro Leu Arg Leu Val
1 5

<210> 109
<211> 14
<212> PRT
<213> Homo sapiens

<400> 109

Ser Thr Asn Ala Met Gly Trp Val Arg Gln Ala Pro Asp Lys
1 5 10

<210> 110
<211> 30
<212> PRT
<213> Homo sapiens

<400> 110

Asp Asp Gly Ser Asp Thr Arg Tyr Ala Pro Ala Val Lys Gly Arg Ala
1 5 10 15

Thr Ile Ser Arg Asp Asn Gly Gln Arg Thr Val Ser Leu Gln

20 25 30

<210> 111
<211> 8
<212> PRT
<213> Homo sapiens

<400> 111

Ala Tyr Ile Ser Gly Cys Asp Tyr
1 5

<210> 112
<211> 8
<212> PRT
<213> Homo sapiens

<400> 112

Pro Gly Gly Pro Leu Arg Leu Val
1 5

<210> 113
<211> 14
<212> PRT
<213> Homo sapiens

<400> 113

Ser Ser Asn Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys
1 5 10

<210> 114
<211> 30
<212> PRT
<213> Homo sapiens

<400> 114

Asp Asp Gly Ser Gly Thr Arg Tyr Ala Pro Ala Val Lys Gly Arg Ala
1 5 10 15

Thr Ile Ser Arg Asp Asn Gly Gln Arg Thr Val Ser Leu Gln
20 25 30

<210> 115
<211> 8
<212> PRT
<213> Homo sapiens

<400> 115

Ala Tyr Ile Ser Gly Cys Asp Tyr
1 5

<210> 116

<211> 8
<212> PRT
<213> Homo sapiens

<400> 116

Pro Gly Gly Pro Leu Arg Leu Val
1 5

<210> 117
<211> 14
<212> PRT
<213> Homo sapiens

<400> 117

Ser Ser Asn Ala Met Gly Trp Val Arg Gln Ala Pro Gly Lys
1 5 10

<210> 118
<211> 30
<212> PRT
<213> Homo sapiens

<400> 118

Asp Asp Gly Ser Gly Thr Arg Tyr Ala Pro Ala Val Lys Gly Arg Val
1 5 10 15

Thr Ile Ser Arg Asp Asn Gly Gln Arg Thr Val Ser Leu Gln
20 25 30

<210> 119
<211> 8
<212> PRT
<213> Homo sapiens

<400> 119

Ala Tyr Ile Ser Gly Cys Asp Tyr
1 5

<210> 120
<211> 43
<212> PRT
<213> Homo sapiens

<400> 120

Ala Ser Val Ser Val Asn Pro Gly Glu Thr Val Lys Ile Thr Cys Ser
1 5 10 15

Gly Gly Gly Ser Tyr Gly Gly Ser Tyr Tyr Tyr Gly Trp Tyr Gln Gln
20 25 30

Lys Ala Pro Gly Ser Ala Pro Val Ser Val Ile

35 40

<210> 121
<211> 20
<212> PRT
<213> Homo sapiens

<400> 121

Asp Asp Glu Ala Val Tyr Phe Cys Gly Asn Ala Asp Asn Ser Gly Ala
1 5 10 15

Ala Phe Gly Ala
20

<210> 122
<211> 43
<212> PRT
<213> Homo sapiens

<400> 122

Ala Ser Val Ser Val Asn Pro Gly Glu Thr Val Lys Ile Thr Cys Ser
1 5 10 15

Gly Gly Gly Arg Tyr Gly Gly Ser Tyr Tyr Tyr Gly Trp Tyr Gln Gln
20 25 30

Lys Ala Pro Gly Ser Ala Pro Val Ser Val Ile
35 40

<210> 123
<211> 20
<212> PRT
<213> Homo sapiens

<400> 123

Asp Asp Glu Ala Val Tyr Phe Cys Gly Asn Ala Asp Asn Ser Gly Ala
1 5 10 15

Ala Phe Gly Ala
20

<210> 124
<211> 43
<212> PRT
<213> Homo sapiens

<400> 124

Ala Ser Val Ser Ala Asn Pro Gly Glu Thr Val Lys Ile Thr Cys Ser
1 5 10 15

Gly Gly Gly Arg Tyr Gly Ala Ser Tyr Tyr Tyr Val Trp Tyr Gln Gln
20 25 30

Lys Ala Pro Gly Ser Ala Pro Val Ser Val Ile
35 40

<210> 125
<211> 20
<212> PRT
<213> Homo sapiens

<400> 125

Asp Asp Glu Ala Val Tyr Phe Cys Gly Asn Ala Asp Asn Ser Gly Ala
1 5 10 15

Ala Phe Gly Ala
20

<210> 126
<211> 43
<212> PRT
<213> Homo sapiens

<400> 126

Ala Ser Val Ser Ala Asn Pro Gly Glu Thr Val Lys Ile Thr Cys Ser
1 5 10 15

Gly Gly Gly Arg Tyr Gly Ala Ser Tyr Tyr Tyr Val Trp Tyr Gln Gln
20 25 30

Lys Ala Pro Gly Ser Ala Pro Val Thr Val Ile
35 40

<210> 127
<211> 20
<212> PRT
<213> Homo sapiens

<400> 127

Asp Asp Glu Ala Val Tyr Phe Cys Gly Asn Ala Asp Asn Ser Gly Ala
1 5 10 15

Ala Phe Gly Ala
20

<210> 128
<211> 114
<212> PRT
<213> Homo sapiens

<400> 128

```
Trp Gly Ala Gly Leu Leu Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys
1               5                  10                  15

Gly Val Tyr Gly Gly Ser Phe Ser Gly Tyr Tyr Trp Ser Trp Ile Arg
            20                  25                  30

Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile Gly Glu Ile Asn His Ser
        35                  40                  45

Gly Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser
    50                  55                  60

Val Asp Thr Ser Lys Lys Gln Leu Ser Leu Lys Leu Ser Ser Val Asn
65                  70                  75                  80

Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Val Ile Thr Arg Ala
                85                  90                  95

Ser Pro Gly Thr Asp Gly Arg Tyr Gly Met Asp Val Trp Gly Gln Gly
            100                 105                 110

Thr Thr
```

<210> 129
<211> 100
<212> PRT
<213> Homo sapiens

<400> 129

```
Pro Ala Ser Val Ser Gly Ser Pro Gly Gln Ser Ile Thr Ile Ser Cys
1               5                  10                  15

Thr Gly Thr Ser Ser Asp Val Gly Gly Tyr Asn Tyr Val Ser Trp Tyr
            20                  25                  30

Gln Gln Asn Pro Gly Lys Ala Pro Lys Leu Met Ile Tyr Asp Val Ser
        35                  40                  45

Asn Arg Pro Ser Gly Ile Ser Asn Arg Phe Gly Ser Ser Lys Ser Gly
    50                  55                  60

Asn Thr Ala Ser Leu Thr Ile Ser Gly Leu Gln Ala Asp Asp Glu Ala
65                  70                  75                  80

Asp Tyr Tyr Cys Thr Ser Tyr Thr Asn Asp Ser Asn Ser Gln Val Phe
                85                  90                  95
```

Gly Gly Gly Thr
100

<210> 130
<211> 124
<212> PRT
<213> Homo sapiens

<400> 130

Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Gly Ser
1 5 10 15

Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Val Ser Ser Asn Tyr
20 25 30

Met Thr Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val Ser
35 40 45

Leu Ile Tyr Ser Gly Gly Ser Thr Thr Tyr Tyr Ala Glu Ser Val Lys
50 55 60

Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Gln Met
65 70 75 80

Asn Ser Leu Arg Val Glu Asp Thr Met Asn Ser Val Arg Val Glu Asp
85 90 95

Thr Ala Val Asn Ser Thr Ser Val Gly Thr Asn Asn Phe Tyr Met Asp
100 105 110

Val Trp Gly Lys Gly Thr Thr Val Thr Val Ser Ser
115 120